January 23, 2002

MODIS sensor Working Group (MsWG) Summary

Attendance: Suraiya Ahmad, Bill Barnes, Roger Drake, Wayne Esaias, Bob Evans, Chris Moeller, Vince Salomonson, Junqiang Sun, Gary Toller, Jack Xiong, Eric Vermote, Jim Young, Zhengming Wan, Joe Esposito

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Scheduled Items

Item 1. Mirror side dependent RVS LUT

FM1 RVS is mirror side dependent, up to roughly 0.3 % at extreme angles.
VS) How does this compare with Terra
JX) There is no data for Terra. The RVS was derived from a witness sample. We have found a mirror side difference from on-orbit data in the RSB, no change for the TEB.
FM1 The maximum difference at extreme angles is roughly 0.3% from pre-launch for the PC bands (less for all others). Closed NADIR door data shows less than 0.1% over all bands.
JX) MCST has the capability to apply an RVS correction in the LUT file.
We can a) do nothing; b) since they are very close, use average or either RVS.
BE) Want to be sure about what we are doing.
BB) Use average at launch and measure on-orbit to confirm.

Time dependent RVS

JX) Trending of PFM shows time and AOI dependence (mainly in bands 8, 9, and 3). Need to prepare new time dependent RVS capability (LUT) for both Terra and Aqua L1B.

Item 2. New Solar Spectral Irradiance

JX) Do we want to update to Thuillier 2001?
VS) What is SeaWiFS using? We will speak about this Thursday and decide for next week.

Item 3. FM1 B6 Issue for Aqua

JX) On band 6 the current aggregation algorithm fails due to the number of consecutive dead detectors.
BB) Three consecutive detectors cause a problem.
RD) Next cool down may affect other detector.
BB) We could mark the aggregate as bad data for the 3 or more dead case. No decision is taken at present.

Item 4. FM1 PC bands calibration when BB is above 300K

JX) Bands 33, 35, and 36 saturate for BB above 300°K. MCST will store the gain in a LUT for saturating bands and derive the LUT on-orbit.
BB) We will be unable to get A_2 for the saturated detectors.
RD) What do we do about DCR for the saturated detectors. Need to check that we are not experiencing large drifts.

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JX) Look at the EV for saturation on BB to see that everything is ok.

MCST Action: Check what happens to DCR when bands saturate on the BB.

CM) How long is a BB warm up/cool down cycle?

JX) BB is above 300°K for about 4-5 hours

Item 5. Striping reduction in L1B

JX) Striping reduction can be done in L1 but need to get the Coefficients for B26 and 7 then possibly 6 and 5.

CM) Are there any thermal bands which need correction?

JX) Bands 23 and 24 (MWIR)

CM) de-striping would be useful in all TEB

MCST Action: Put together a report on striping in the MWIR (KC)

BB) How do you (CM) do de-striping?

CM) Use the B5 aggregate to get the B5 effect on each channel of B26. Then look at special locations around the globe (the influence of the source depends upon the water vapor in the atmosphere). Look at various chosen scenes to determine improvement due to coefficient used. Some variability around the globe (1-2% uncertainty at L_{typ}).

BB) Is the striping gone after correction?

CM) Peak to valley for B26 Ltyp is reduced by roughly 80% with 1-2% uncertainty.

BB) Is the striping an offset?

CM) All channels move together. The current coefficient values may be a little high. Focusing on December 2000 granules. Influence due to the optical leak is seen but it may contain electronic cross talk.
For TEB need to do ch to ch correction. Normalize to "favorite" channel in MWIR, LWIR, and PC bands.

EV) Will send data (results) to CM. Calibration will affect low water vapor scenes, which will affect the coefficient to be derived.

CM) The Band 5 influence is well handled.

BB) This is pretty drastic and needs debate before making changes to the L1 code for doing thermal bands. Information could be lost due to choice of "favorite" channel. We do not want to affect the data with smoothing.

Around the Table

Participant: SA – Data is not currently available from the DAAC. DAAC should be up and running again in 2-3 days. New firewall security upgrade is causing this problem.

Participant: VS – Jim Simpson will visit on February 12 to discuss what Scripts is doing to correct for MODIS idiosyncracies. They will also present arctic snow mapping results.

JX) Can have meeting at MCST conference room or in a larger room in other suite if needed.

Participant: BE – Working our way through visible RVS. Minnet has set up a radiative transfer model algorithm for FM1.

Participant: RD - Launch Date 4/18/02 2:55 AM PST fall back 4/22/02. The window is 20 minutes.